What is Particulate Matter (PM)

Particulate Matter, also known as particle pollution, is made up of tiny solid particles and liquid droplets found in the air. Particulate Matter is made up of acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles.

How big is particulate matter?

Some particles, such as dust, dirt, soot and smoke, are large or dark enough to see with the naked eye. Others are so small, often less than one-hundredth the width of a human hair, and can only be detected using a microscope.

Inhalable Coarse Particles (PM10) have a diameter larger than 2.5 micrometers and smaller than 10 micrometers.

Fine Particles (PM2.5) have a diameter of 2.5 micrometers and smaller.

Where does particulate matter come from?

Primary particles are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires.

Secondary Particles form in complicated reactions when chemicals that are emitted from power plants, industries and automobiles react in the atmosphere. These particles make up most of the fine particle pollution in the country.

How can particulate matter affect us?

Health: The size of particles is directly linked to their potential for causing health problems. Small particles, those less than 10 micrometers in diameter, pose the greatest problems because they can get deep into your lungs, and some may event get into your bloodstream.

PM exposure has been linked to the following health problems:

- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing;
- decreased lung function;
- aggravated asthma;
- development of chronic bronchitis;
- irregular heartbeat;
- nonfatal heart attacks;
- and premature death in people with heart or lung disease.

Visibility: Fine particles are the major cause of reduced visibility (haze) in parts of the United States, including in many of our national parks and wilderness areas.

Environment: Particles can be carried over long distances by wind and then settle on the ground or in the water. The effects of this settling include:

- making lakes and streams acidic;
- changing the nutrient balance in coastal waters and large river basins;
- depleting the nutrients in soil;
- damaging sensitive forests and farm crops;
- affecting the diversity of ecosystems;
- and staining and damaging stones.

What can we do to reduce particulate matter?

- Limit the use of household and personal products that cause fumes.
- Conserve energy at home to reduce demands on power plants.
- Do not burn leaves and other yard waste.
- Do not use fire pits on Air Pollution Action Days.

Particulate Monitoring Air Monitoring

The Cook County Department of Environmental Control operates an air monitoring network for Fine Particles, Sulfur Dioxide, Nitrous Oxide, Ozone, Lead and certain other toxic metals air pollutants. This network includes eight continuous and eight non-continuous monitoring sites as well as one special project air toxic monitoring site. These sites are located throughout Cook County, including in the City of Chicago.

Air quality data is pulled every hour and stored at the Department's computer in the Maywood Lab. Daily average readings may be accessed by the public through a recorded message, which is translated to an Air Quality Index. The telephone number for this message is 708-865-6320.